

# Web Posting of Behind-the-Meter Solar PV Data

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PRINCIPAL FORECASTER

**Load Forecasting Task Force**

November 9, 2020

# Overview

- **Behind-the-meter solar PV power data comes from a sample of 10,000 individual sites distributed across the state that are statistically similar to the characteristics of all solar PV sites. Both installed capacity and interval data are considered to be estimated actuals, unlike telemetered load and generator data.**
- **Beginning later this year, the NYISO will report hourly values of actual and day-ahead forecasts for each NYISO zone and in total. Data will be available for download from the NYISO web site and from DSS.**
- **No special permissions are needed to download from the NYISO web site. A DSS ID and digital certificate are needed to obtain the data from DSS.**
- **NYISO will also post the 10-year forecast of zonal hourly solar PV data used in the 2020 RNA before the end of the year.**

# Data Reporting

- The web postings will report hourly values of estimated actual and day-ahead forecasts of behind-the-meter solar PV power for each NYISO zone and in total.
- The current estimated total MW-AC impact to the grid ranges from 0 at night or when the sky is completely overcast to as much as 1,500 MW-AC on days when solar irradiance is at its peak.
- The actual MW-AC output is lower than the installed capacity shown in the following slides due to conversion of power from DC to AC, together with the effects of sky conditions, orientation of panels, shading, and other factors.



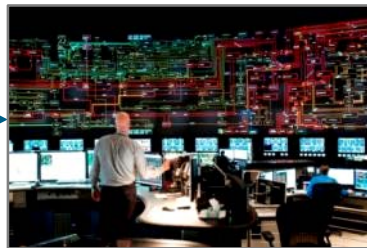


# Solar Forecasting Schematic



Grid Connected Solar Plants

- Meteorological data (every 30-secs)
- Plant meter readings (every 6-seconds)




NYISO

Grid Connected Solar Plant Meter readings and meteorological data

- BTM zonal solar forecasts\* and Grid Connected Solar Plant forecasts (1x per hour covering 7 days)\*\*
- Estimated zonal actual BTM production

*BTM solar data will now be posted on NYISO Web Site*



Real-time BTM inverter measurements

BTM Solar Site Samples



Solar Vendors

- \* BTM zonal solar forecasts are integrated into the NYISO's load forecasting system. Data is currently updated once per hour at 15 minute intervals
- \*\* Grid-scale solar plant forecasts are only integrated into NYISO's EMS at this time, not its Market Systems

# Downloading Information from the NYISO Website


Power Grid Data - NYISO    LBMP Results Index    Reports & Info - NYISO

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**REAL-TIME DATA DASHBOARD**

**SYSTEM CONDITIONS**

**ENERGY MARKET & OPERATIONAL DATA**

- Pricing Data
- Power Grid Data
- Load Data
- Reports & Info**
- Postings by Date
- Custom Reports
- Ancillary Services

**INSTALLED CAPACITY MARKET (ICAP)**

**TRANSMISSION CONGESTION CONTRACTS (TCC)**

**DISTRIBUTED ENERGY RESOURCES (DER)**

- Demand Response
- Behind-the-Meter Net Generation

**MARKET ACCESS LOGIN**





**Reports & Info**

[Postings by Date](#)

[Custom Reports](#)

[Ancillary Services](#)

[Installed Capacity Market \(ICAP\)](#)

[Transmission Congestion  
Contracts \(TCC\)](#)

[Distributed Energy Resources  
\(DER\)](#)



[Market Access Login](#)

**Links**

**Reports**

[Gen Economic Dispatch Analysis](#)

[Data Waldwick PAR Issue](#)

**DOE EIA 930**

[EIA 930 Hourly Posting](#)

[EIA 930 Daily Posting](#)

**Uplift Reports**

[Zonal Uplift](#)

[Resource-Specific Uplift](#)

**BTM Solar Information**

[BTM Solar Estimated Actuals](#)

[BTM Day Ahead Zonal Forecast](#)

**General Information**

[NYCA ACE Data](#)

[NYISO Bid Data - 3 Month Release](#)

[External Transaction TSC- Summary & Details](#)

[Generator Names](#)

[Load Names](#)

[Transmission Owner Info](#)

[Subzones by Transmission Owner](#)

[Subzone Definitions](#)

[Regulation Movement Data](#)



## BTM Solar Estimated Actuals

### CSV Files

[11-02-2020](#)  
[11-01-2020](#)  
[10-30-2020](#)  
[10-29-2020](#)  
[10-27-2020](#)  
[10-26-2020](#)  
[10-25-2020](#)

### Last Updated

11/03/20 07:50 EST  
 11/02/20 07:50 EST  
 10/31/20 07:50 EDT  
 10/30/20 07:50 EDT  
 10/28/20 07:50 EDT  
 10/27/20 07:50 EDT  
 10/26/20 07:50 EDT

### Archived Files (zip format)

### CSV Files

[11-2020](#)  
[10-2020](#)

### Last Updated

11/03/20 07:50 EST  
 10/31/20 07:50 EDT

Example of CSV format of estimated actual Solar BTM Data

	A	B	C	D	E
1	Time Stamp	Time Zone	Zone Name	MW Value	
145	11/2/2020 11:00	EST	WEST	38.39	
146	11/2/2020 12:00	EST	CAPITL	121.27	
147	11/2/2020 12:00	EST	CENTRL	28.73	
148	11/2/2020 12:00	EST	DUNWOD	59.67	
149	11/2/2020 12:00	EST	GENESE	31.32	
150	11/2/2020 12:00	EST	HUD VL	155.62	
151	11/2/2020 12:00	EST	LONGIL	297.15	
152	11/2/2020 12:00	EST	MHK VL	26.59	
153	11/2/2020 12:00	EST	MILLWD	26.3	
154	11/2/2020 12:00	EST	N.Y.C.	157.27	
155	11/2/2020 12:00	EST	NORTH	1.66	
156	11/2/2020 12:00	EST	SYSTEM	925.25	
157	11/2/2020 12:00	EST	WEST	19.67	
158	11/2/2020 13:00	EST	CAPITL	128.11	

20201102BTMEstimatedActual

## BTM Day Ahead Zonal Forecast

### CSV Files

[11-04-2020](#)

[11-03-2020](#)

[11-01-2020](#)

[10-31-2020](#)

[10-29-2020](#)

[10-28-2020](#)

[10-27-2020](#)

### Last Updated

11/03/20 07:55 EST

11/02/20 07:55 EST

10/31/20 07:55 EDT

10/30/20 07:55 EDT

10/28/20 07:55 EDT

10/27/20 07:55 EDT

10/26/20 07:55 EDT

### Archived Files (zip format)

### CSV Files

[11-2020](#)

[10-2020](#)

### Last Updated

11/03/20 07:55 EST

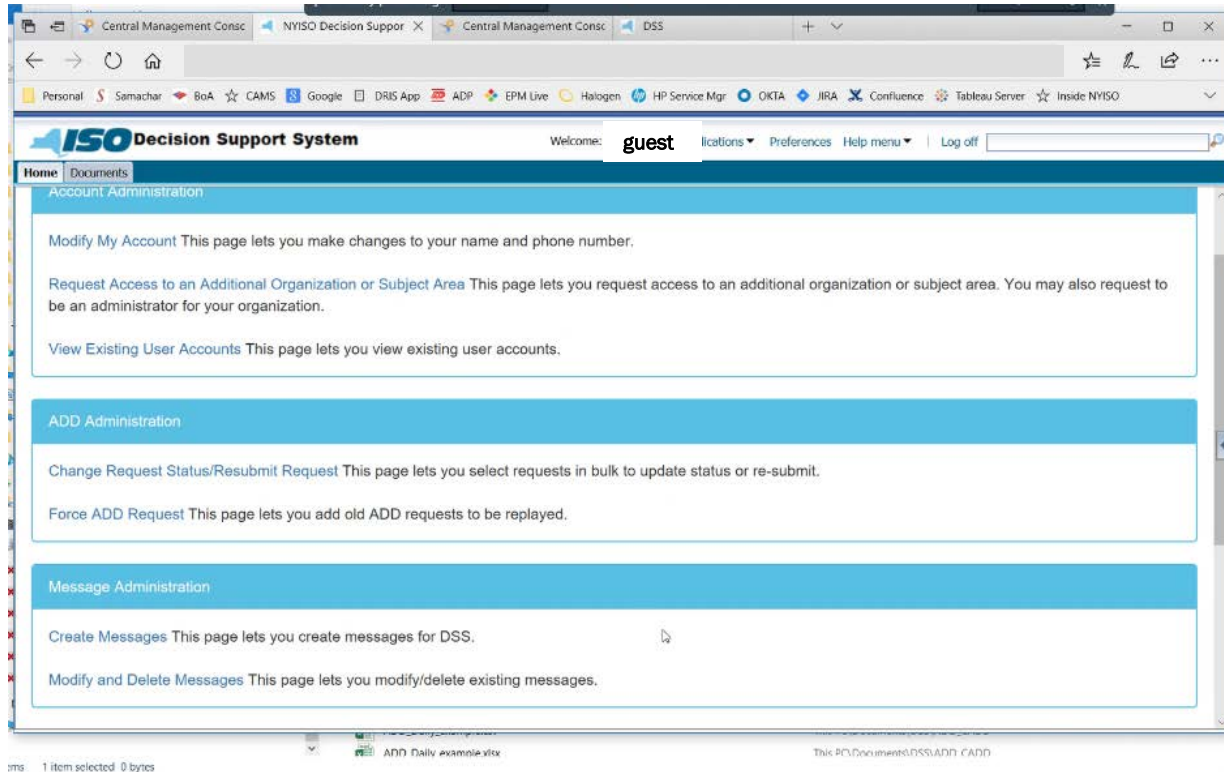
10/30/20 07:55 EDT

Example of CSV format of day-ahead forecast of Solar BTM Data

	A	B	C	D	E
1	Time Stamp	Time Zone	Zone Name	MW Value	
145	11/4/2020 11:00	EST	WEST	51.51	
146	11/4/2020 12:00	EST	CAPITL	152.83	
147	11/4/2020 12:00	EST	CENTRL	66.86	
148	11/4/2020 12:00	EST	DUNWOD	56.24	
149	11/4/2020 12:00	EST	GENESE	54.15	
150	11/4/2020 12:00	EST	HUD VL	142.49	
151	11/4/2020 12:00	EST	LONGIL	255.77	
152	11/4/2020 12:00	EST	MHK VL	45.11	
153	11/4/2020 12:00	EST	MILLWD	24.79	
154	11/4/2020 12:00	EST	N.Y.C.	133.25	
155	11/4/2020 12:00	EST	NORTH	1.66	
156	11/4/2020 12:00	EST	SYSTEM	983.83	
157	11/4/2020 12:00	EST	WEST	50.68	
158	11/4/2020 13:00	EST	CAPITL	131.93	
159	11/4/2020 13:00	EST	CENTRL	67.00	

20201104btmdaforecast

# DSS Data Access



Preliminaries: Apply for a DSS ID and password, if you don't have one. A current digital certificate is needed. Instructions for how to do this are posted on the NYISO web site.

Central Management Cons... NYISO Decision Support X Central Management Cons... DSS

ISO Decision Support System

Welcome: **guest** | Applications | Preferences | Help menu | Log off

Home Documents

Step 1 Step 2 Step 3 Step 4

To which areas would you like to request access?

- ICAP Market Data**  
This subject area contains ICAP Market data. If you are member of IMO or MMA groups, contact Service Desk for additional shared folders access.
- Demand Forecasting Market Data**  
This subject area contains Demand Forecasting data.
- DR Market Data**  
This subject area contains DR Market data. If you are member of DRO or MMA groups, contact Service Desk for additional shared folders access.
- Ops Regional Market Coordination**  
This subject area is restricted to the Operations Performance Analysis group

Back Next

15 1 item selected 0 bytes

ADD Daily Examples

This PC\Documents\DSS\ADD\_CADD

Preliminaries: When applying for the DSS ID, request access to 'Demand Forecasting Market Data'


Power Grid Data - NYISO    LBMP Results Index    Reports & Info - NYISO

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**REAL-TIME DATA DASHBOARD**

**SYSTEM CONDITIONS**

If you already have DSS access to Demand Forecasting Market Data, then you can navigate to the Solar BTM data directly through DSS access point.

**ENERGY MARKET & OPERATIONAL DATA**

- Pricing Data
- Power Grid Data
- Load Data
- Reports & Info
- Postings by Date
- Custom Reports
- Ancillary Services

**INSTALLED CAPACITY MARKET (ICAP)**

**TRANSMISSION CONGESTION CONTRACTS (TCC)**

**DISTRIBUTED ENERGY RESOURCES (DER)**

- Demand Response
- Behind-the-Meter Net Generation

**MARKET ACCESS LOGIN**

Central Management Cons... NYISO Decision Support X... Central Management Cons... DSS

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**NYISO Decision Support System** Welcome: **guest** Applications Preferences Help menu | Log off

Home **Documents**

View New Organize More Actions Details

My Documents

Folders

- Public Folders
  - Administrative Reports
  - Auditing
  - Customer Settlement Documents
  - Demand Forecasting Documents**
    - Demand Forecasting Reports**
  - DR Market Documents
  - Enhanced Price Validation Documents
  - ICAP Market Documents
  - LCM
  - Market Monitoring Documents
  - Monitoring Report Sample
  - NYGATS
  - Operations Regional Market Coordination Documents

Categories Search

Title	Type	Last Run
BTM Solar Combined Actual and Forecast	Web Intelligence	
BTM Solar Combined Actual and Forecast - Scheduled	Web Intelligence	Nov 3, 2020 9:00 AM
BTM Solar Day-Ahead Forecast	Web Intelligence	
BTM Solar Day-Ahead Forecast - Scheduled	Web Intelligence	Nov 3, 2020 9:00 AM
BTM Solar Estimated Actuals	Web Intelligence	
BTM Solar Prior-Day Estimated Actuals - Scheduled	Web Intelligence	Nov 3, 2020 9:00 AM

Total: 6 items

Navigation within DSS

Select Documents/Public Folders

Select Demand Forecasting Documents & then Reports

There are a series of reports, some of which are Scheduled once each hour for a set period of time. Other non-scheduled reports have time periods that can be set by the user.



The screenshot shows the NYISO Decision Support System interface. The main content area displays a table of reports with the following data:

Title	Type	Last Run	Instances	Description
BTM Solar Combined Actual and Forecast	Web Intelligence		0	The purpose of t
BTM Solar Combined	Web Intelligence	Nov 3, 2020 9:00 AM	21	The purpose of t
BTM Solar Day-Ahead	Web Intelligence	Nov 3, 2020 9:00 AM	21	The purpose of t
BTM Solar Day-Ahead	Web Intelligence	Nov 3, 2020 9:00 AM	21	The purpose of t
BTM Solar Estimated	Web Intelligence		0	The purpose of t
BTM Solar Prior-Day	Web Intelligence	Nov 3, 2020 9:00 AM	21	The purpose of t

A context menu is open over the 'BTM Solar Combined' report, with the 'View Latest Instance' option highlighted. The 'History' option is also highlighted with a red box. The interface includes a navigation pane on the left with folders like 'Administrative Reports', 'Auditing', and 'Demand Forecasting Documents'. The top navigation bar shows 'Home', 'Documents', and 'Welcome: guest'. The bottom status bar indicates 'Total: 6 Items'.

For scheduled reports, select report of interest and 'right click' to open the drop menu. Then select 'View Latest Instance'.

See below for how to view prior History

Currently presenting Give Control Stop Presenting

Central Management Cons... NYISO Decision Support Central Management Cons... DSS

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**NYISO Decision Support System** Welcome: **guest** Applications Preferences Help menu Log off

Home Documents **BIM Solar Combined...**

Web Intelligence Track Drill Filter Bar Freeze Outline Reading Design

Navigation Map

- BIM Solar Combined Actual and Forecast
- BIM Solar Day-Ahead Forecast
- BIM Solar Estimated Actuals
- BIM Solar Combined Actual and Forecast**

Date Time	Time Zone	Zone Code	Zone PTID	Zone Name	MW Actual	MW Forecast
11/02/2020 10:00:00	EST	A	61752	WEST	39.43	18.33
11/02/2020 10:00:00	EST	B	61753	GENESE	29.86	27.59
11/02/2020 10:00:00	EST	C	61754	CENTRL	12.96	26.75
11/02/2020 10:00:00	EST	D	61755	NORTH	0.34	0.98
11/02/2020 10:00:00	EST	E	61756	MHK VL	20.97	20.64
11/02/2020 10:00:00	EST	F	61757	CAPITL	71.29	82.83
11/02/2020 10:00:00	EST	G	61758	HUD VL	92.43	97.81
11/02/2020 10:00:00	EST	H	61759	MILLWD	19.52	17.76
11/02/2020 10:00:00	EST	I	61760	DUNWOD	44.28	40.30
11/02/2020 10:00:00	EST	J	61761	N.Y.C.	119.79	89.01
11/02/2020 10:00:00	EST	K	61762	LONGIL	258.53	186.99
11/02/2020 10:00:00	EST	S	99999	SYSTEM	709.40	608.97
11/02/2020 11:00:00	EST	A	61752	WEST	38.38	19.01
11/02/2020 11:00:00	EST	B	61753	GENESE	32.82	27.81

BTM Solar Day-Ahead Forecast | BTM Solar Estimated Actuals | **BTM Solar Combined Actual and Forecast**

BTM Solar Combined Actual and Forecast Page 2 of 2+ 100% 48 minutes ago

Sample of DSS report showing actual and forecast values

Currently presenting Give Control Stop Presenting

Central Management Cons... NYISO Decision Suppor... Central Management Cons... DSS

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**NYISO Decision Support System** Welcome: **guest** plications Preferences Help menu Log off

Home Documents **BIM Solar Combined...**

Web Intelligence Track Drill Filter Bar Freeze Outline Reading Design

Navigation Map

- BTM Solar Combined Actual and Forecast
- BTM Solar Day-Ahead Forecast
- BTM Solar Estimated Actuals
- BTM Solar Combined Actual and Forecast

Date Time	Time Zone	Zone Code	Zone PTID	Zone Name	MW Actual	MW Forecast
11/02/2020 10:00:00	EST	A	61752	WEST	39.43	18.33
11/02/2020 10:00:00	EST	B	61753	GENESE	29.86	27.59
11/02/2020 10:00:00	EST	C	61754	CENTRL	12.96	26.75
11/02/2020 10:00:00	EST	D	61755	NORTH	0.34	0.98
11/02/2020 10:00:00	EST	E	61756	MHK VL	20.97	20.64
11/02/2020 10:00:00	EST	F	61757	CAPITL	71.29	82.83
11/02/2020 10:00:00	EST	G	61758	HUD VL	92.43	97.81
11/02/2020 10:00:00	EST	H	61759	MILLWD	19.52	17.76
11/02/2020 10:00:00	EST	I	61760	DUNWOD	44.28	40.30
11/02/2020 10:00:00	EST	J	61761	N.Y.C.	119.79	89.01
11/02/2020 10:00:00	EST	K	61762	LONGIL	258.53	186.99
11/02/2020 10:00:00	EST	S	99999	SYSTEM	709.40	608.97
11/02/2020 11:00:00	EST	A	61752	WEST	38.39	19.01
11/02/2020 11:00:00	EST	B	61753	GENESE	32.82	27.81

BTM Solar Day-Ahead Forecast | BTM Solar Estimated Actuals | **BTM Solar Combined Actual and Forecast**

BTM Solar Combined Actual and Forecast Page 2 of 2+ 100% 48 minutes ago

Once data is selected, it can be exported to either an Excel spreadsheet or a csv file.

The screenshot shows the NYISO Decision Support System web application. The browser tabs include 'Central Management Consc', 'NYISO Decision Suppor', and 'DSS'. The page title is 'New York Independent System Operator - Decision Sup'. A 'Prompts' dialog box is open, titled 'Select a Start Date (MM/DD/YYYY)'. It features a 'Prompts Summary' list with two items: '\* Select a Start Date (MM/DD/YYYY):' and '\* Select an End Date (MM/DD/YYYY):'. The 'Select a Start Date' section includes a date input field with a pull-down menu showing '11/04/2020...'. Below this is a list of dates from 11/04/2020 to 10/26/2020. The system clock at the bottom of the dialog shows 'November 3, 2020 9:46:51 AM GMT-05:00'. The dialog has 'OK' and 'Cancel' buttons.

When creating your own report, you must specify a start and end date. You can select from a pull-down menu or type in values

ISO Decision Support System

Welcome: **guest** | Applications | Preferences | Help menu | Log off

Home Documents

History - BTM Solar Combined Actual and Forecast - Scheduled

View - | Organize - | Send - | More Actions -

Instance Time	Title	Status	Created By	Type	Parameters
Nov 3, 2020 9:00 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Nov 2, 2020 9:00 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Nov 1, 2020 9:00 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 31, 2020 9:00 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 30, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 29, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 28, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 27, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 26, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 25, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 24, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 23, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	
Oct 22, 2020 9:01 AM	BTM Solar Combined Actual and Forecast	Success	Administrator	Web Intelligence	

Total: 21 Items

1 item selected 0 bytes

ADD Daily example.xlsx

This PC Documents\ISS\ADD\_CADD

If History is selected, you can choose from a number of prior reports by date.

# Questions?

# Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

